EPA Comments on *Methodology for Oregon's 2012 Water Quality Report and List of Water Quality Limited Waters*

Comments on *Methodology for Oregon's 2012 Water Quality Report*

Specific Comments:

Page 4, part II:

- Please include the word "designated" before "beneficial uses" in the first paragraph.

Page 5, part II:

- The list of narrative criteria provisions includes: *Less stringent natural conditions to supersede numeric criteria (OAR 340-041-0007(2).* This provision was disapproved by EPA on 8/8/2013 and references to it should be removed from the document.

Page 7, part III. A.

- In the discussion of the rotating basin approach, it indicates that ODEQ is piloting the rotating basin approach described in EPA's 2009 guidance. This guidance says the whole state would ideally be completed over a four or five year period. At 3 basins per cycle, it will take ODEQ five listing cycles to complete the state, or ten years if lists are produced every two years. This is unacceptable. The 2009 EPA guidance also states that a schedule of when each basin would be targeted should be included and a description of how this approach is incorporated into the State's monitoring and assessment methodology should be included. The idea is to focus monitoring and therefore assessment efforts in selected basins, assuming they will be given a more thorough treatment in the assessment as more monitoring has been done there. It is assumed that other existing data for the rest of the state will also be reviewed, but it will be minimal because monitoring efforts weren't focused there. ODEQ must include as part of its rotating basin rationale a schedule that explains how monitoring efforts will be focused, which basins will be selected for assessment and a schedule that details a plan to complete an assessment of the entire state within a four or five year period, as indicated in the guidance.

Page 9 & 10, part III.C.

- EPA has concerns about the extent to which all existing readily available data is being reviewed. In addition to the listed databases, DEQ needs to also look at STORET data, as it is easily obtained public information and contains relevant data. Other such sources, such as fish and health advisories, reports from other state and federal agencies, academic papers, etc. must also be reviewed.

- EPA is also concerned that data from Superfund and contaminated sites are not being reviewed for potential impaired waters listings. For example, there is a significant amount of existing

water column, sediment, and fish and shellfish tissue data related to the Portland Harbor Superfund Site. Based on that data, a final Baseline Human Health Risk Assessment and Baseline Ecological Risk Assessment have determined that several toxics found in the water column, sediment and/or tissue are presenting unacceptable risk to humans or ecological receptors within the Site which comprises the lower 12 miles of the Willamette Rivers. If ODEQ is unable to find this publically available information, EPA can assist with locating documents.

- EPA would like to encourage ODEQ to develop a listing methodology for contaminated sediment data. In certain locations, sediment data may be more readily available than water column data. This sediment data may capture information about impaired waterbodies that would otherwise be missed if only water column data were being considered. These potential impairments could be impacting human health and the environment, and consideration of such sediment data in determining the impairment status of a waterbody would be more protective. Nonattainment of aquatic life or antidegradation standards, as well as impairments to other designated uses could all result in listings.

- Requiring metadata on LLID and river mile are unnecessary, as DEQ can calculate these from the latitude/longitude data.

- If DEQ receives data from an external source and it meets QA requirements, the data must be evaluated, even if it falls outside the basins and parameters that are the focus of this assessment, for example the City of Salem data listed in Table 1. The intent of the call for data is to encourage outside entities to submit data. The application of a rotating basin approach is to allow the State to focus data collection on particular basins, but EPA guidance indicates that new data outside the selected basins should assessed as well.

- Please also provide EPA with an explanation as to why none of the data submitted by the public met the QA/QC thresholds. This could indicate that the solicitation is not clear enough.

Page 21, part II. D. 4.c.:

- Please describe or better define what a "use clarification" is. Is this an official use change? If so, then DEQ should cite to the appropriate regulations.

Comments Regarding Parameters

- Many of the criteria assessment methodologies include "time periods of interest". This is inappropriate where the uses are year-round. Because a waterbody is attaining in a "time period of interest" does not mean that it is attaining the rest of the year. Likewise, if a waterbody is not attaining in a particular season, it does not mean it should only be considered in nonattainment for that season unless designated only for that season/time period.

- Several criteria specify a minimum data requirement for scientific robustness. If a waterbody is placed on 3B for insufficient data, what does this trigger? Adequate data should be collected if

gaps are found. Putting the minimum sample number into the criterion is not meant to allow the exclusion of waterbodies from the 303(d) list where impairment is recognized.

- It appears that a number of parameters were not reviewed for the 2012 Integrated Report. For some parameters, ODEQ indicated that this is because EPA evaluated it for the 2010 List, or because ODEQ itself did for the 2010 List. EPA's data solicitation for the 2010 List included data up to the end of December, 2010. ODEQ's 2010 List data cutoff was prior to that date. The data solicitation for 2012 started in Dec of 2011, so there is the potential for at least a year of new data to exist. It is not clear if ODEQ assumed there was no new data, or if ODEQ did in fact review all of the parameters, but did not find any new data. Please clarify. Please also explain why total dissolved gas has not been reviewed since 2004. Even when using a rotating basin approach, all new data statewide, for all parameters must be evaluated. It appears that the following parameters have not yet been reviewed and need to be: aquatic weeds, E. Coli, Enterococci, fecal coliform, biocriteria, chlorophyll *a*, pH, sedimentation, temperature, total dissolved gas, turbidity, alkalinity, chlorine, cyanide, Demeton, dichlorobenzenes, dichloroethylenes dichloropropene 1,3, dinitrophenols, dioxin 1,2 diphenylhydrazine, halomethanes, hexachlorocyclohexane (Lindane), BHC, Nitrosamines, pentachlorophenol, phosphorus and phosphate phosphorus.

<u>Page 26-27, PARAMETER: Bacteria-E. Coli</u>

- DEQ proposes a Category 3: Insufficient Data, where less than 5 samples are available to evaluate for the season of interest, or 5 to 9 samples for the season of interest with 1 sample exceeding 406 E. coli organisms per 100 milliliters. Please explain what action this category determination triggers and what will be done to address these waters.

- Please explain why there is a "season of interest" associated with the bacterial standard. There is no seasonality indicated in the criterion – it is for recreational uses, and those are considered to be year-round unless specified/designated otherwise.

- "Time period" should be the time period of the designated use, as designated in the criteria. If designated year-round, that should be the period of evaluation.

- DEQ proposes a Category 3B: Insufficient Data-Potential Concern. The minimum number of samples for the bacterial standard is for scientific robustness – it was not intended to result in "no action" due to insufficient data. If you put a waterbody into 3B for insufficient data, what monitoring is triggered by that action?

<u>Page 28-29, Parameter: Bacteria-Enterococci</u>

- Please refer to EPA's comments regarding E. coli. The same concerns apply to Enterococci.

<u>Pages 30-31, Parameter: Bacteria – Fecal coliform</u>

- Please refer to EPA's comments regarding E. coli and Enterococci. The same concerns apply to fecal coliform.

Pages 32-35, Parameter: Biocriteria

- DEQ is proposing to assign two different numbers to differentiate between Category 5 and Category 2. DEQ proposes one percentage taxa loss to designate impairment to aquatic life uses (category 5) and a different percentage taxa loss for meeting aquatic life uses (category 2). This leaves some waters in limbo, not impaired, but also not meeting uses (Table 7), and creates a gray area for restoration. For example, if a waterbody in the Western Mountain Coastal Forest has a predator score of .87, it would be in category 3B and nothing would be done. However, if another waterbody has a score of .84, it would be impaired and would need to meet .92 before it was considered unimpaired. EPA encourages DEQ to consider choosing one number that can be the dividing line between impaired and attaining standards.

- EPA is also concerned about the uncertainty in DEQ's ability to conduct follow-up monitoring for sites designated as Category 3B, due to declining monitoring budgets. It may be some time before the status of such sites could be confirmed with additional data.

Page 37, Parameter: Chlorophyll *a*

- The time period should be evaluated year-round since the designated use is a year-round use.

Pages 38-45, Parameter: Dissolved Oxygen

- Please also refer to detailed comments on the proposed de-listings for the Tualatin Basin. The procedure outlined in this section represents a departure from the procedure laid out in the two memoranda (1998 and 2004 memoranda from ODEQ to EPA) that are part of the record for the approval of the dissolved oxygen standard approved in 1999 and revised and approved in 2004. ODEQ states, "*DEQ may use other information, such as documentation from Oregon Department of Fish and Wildlife or US Fish and Wildlife Service if available, to refine the locations and time periods when the spawning criteria are applied where spawning locations are not specifically designated in rule. The documentation supporting this determination for a specific water body will accompany the assessment for that water body*," however, EPA disagrees that such information can be used to refine or remove uses without the revision being put through an appropriate CWA 303(c) review and approval process. Should sufficient new information become available, in other words, that information should be used to revise/refine uses pursuant to CWA Section 303(c).

- It would also be helpful for ODEQ to clarify its approach to fish uses by stating how it is using the fish use maps that were adopted into standards in 2004 for each of its pollutant criteria. This is not clear from page 41, for example in:
the following designated uses referenced in basin-specific beneficial uses in OAR 340-041-0101 through OAR 340-041-0340 and designated in rule Tables 101A to 340A, Tables 101B to 250B, and Figures 130A to 340B:

• Salmon and steelhead migration corridors
• Salmon and trout rearing and migration depending on ecoregion
• Redband or Lahontan cutthroat trout where designated as uses in Tables 121B, 140B, 190B, 250B, and Figures 180A, 201A, 260A, 310A depending on ecoregion
• Cool water species (no salmonid use) where designated in Tables 140B, 190B, 250B and Figures 130A, 180A, 201A, 286A, 340A (except where identified as warm water in guidelines)

It is difficult to know what the above list means. For example, are the figures showing the extent of salmon and trout rearing and migration (the fish use maps approved in 2004) being used to establish the extent of this use, or is ODEQ instead using the ecoregional approach from its 1998 memo to establish the extent, and if so, is it disregarding the maps' information? If ODEQ is instead using both, as the above statement implies, what is ODEQ doing when the two methods are in conflict – is ODEQ basing the extent on where they overlap and are they mutually exclusive? If ODEQ is evaluating the fish uses with alternative methodologies when the fish use maps have been adopted into standards, extra time and energy may be used without a good environmental outcome. An approach using the fish use maps as the primary source of information could help streamline ODEQ's process. The identification of where the criterion applies for each use could be clarified significantly in this document. Without that basis, it is difficult to evaluate whether or not the methods are appropriate.

- For the following statement from Page 42, regarding the application of the warm water criterion, what does "identified in guidelines" refer to:
  For specific waters designated as Cool water species (no salmonid use) in Tables 140B, 190B, 250B and Figures 130A, 180A, 201A, 286A, 340A where identified in guidelines…

  If the above statement is restricted to the waterbodies in Table 9, please state this above and refer to Table 9 of the text.

- For Table 9, the caption is for "warm water" when the fish use designation is for cool water species. The subset identified are cool water species, but dominated by warm water and identified using the 1998 memorandum guidelines, we believe, but this should be made more explicit.

- For Table 10, what does "assumed spawning time period" mean? Is it the EPA-approved time period during which the designated use occurs? Please identify whether this is or is not the case. Citations should be used to show what information is being used to derive each column's information (figure xx, from OAR-041XXX)

<u>Page 51, Parameter: Sedimentation</u>

- ODEQ states that it is "considering approaches to apply a numeric benchmark based on measurements of stream conditions to implement the narrative criteria." EPA would like a commitment from ODEQ as to when this work will be completed. The Development of Bedded Sediment Benchmarks for Oregon Streams was completed by TetraTech in 2009.

Comments on Proposed Delistings

- Regarding the proposed placement of Record ID 6763, Willamette River, in Category 4b for pentachlorophenol (PCP), EPA would like some additional information to verify that the McCormack and Baxter site is the only source for PCP in this segment. Because the listing includes river miles 0 to 24.8, which includes the Portland Harbor Superfund site, if another source in the segment is known, the waterbody should remain listed. If no other sources have been identified, the movement of this segment into Category 4b would be appropriate, provided that remediation plans are in place should PCP contamination from this source be detected outside the McCormack and Baxter site in the future.

- EPA could not find data supporting delisting or evidence of listing errors in LASAR for these five waterbodies:

  Rock Creek in the Clackamas Subbasin, Silver Creek and North Fork Silver Creek in the Molalla Pudding Subbasin, South Fork Yamhill River in the Yamhill Subbasin and Hood River in the Hood River Subbasin.

  Record 24501 for Rock Creek; DEQ basis for delisting: DEQ data for delisting: [DEQ] STATION 32074 at RM 1.7 from 04/28/2005 to 05/11/2010, 2 of 33 (6%) samples < 11.0 mg/l and < 95% saturation; Comment: EPA's analysis of LASAR data from this station between the same dates showed 5 days out of 34 (15%) exceeding the spawning criteria.

  Record 24508 for North Fork Silver Creek; DEQ basis for delisting: [DEQ] STATION 33193 at RM 2.5 from 01/09/2003 to 03/23/2005, 1 of 10 (10%) samples < 11.0 mg/l and < 95% saturation; EPA Comment: EPA's analysis of LASAR data from this station between the same dates showed 3 days out of 10 (33%) exceeding the spawning criteria.

  Record 24536 for Silver Creek; DEQ bases for delisting [DEQ] STATION 10646 at RM 1.3 from 04/15/2005 to 05/12/2008, 3 of 32 (9%) samples < 11.0 mg/l and < 95% saturation; AND [DEQ] STATION 12061 at RM 5.4 from 10/23/2003 to 10/27/2005, 1 of 9 (11%) samples < 11.0 mg/l and < 95% saturation; EPA Comment: EPA's analysis of LASAR data from these stations between the same dates showed 4 days out of 9 (44%) exceeding the spawning criteria at station 12061 and 4 days out of 32 (13%) exceeding at station 10464.

  Record 20969 for South Fork Yamhill River; DEQ basis for delisting [DEQ] STATION 31547 at RM 5.5 from 02/11/2005 to 02/11/2005, 0 of 1 (0%) samples < 11.0 mg/l and < 95% saturation*;[DEQ] STATION 10948 at RM 16.7 from 02/16/2000 to 04/05/2011, 2 of 25 (8%) samples < 11.0 mg/l and < 95% saturation*;[DEQ] STATION 10949 at RM 27 from 05/14/2009 to 05/14/2009, 0 of 1 (0%) samples < 11.0 mg/l and < 95% saturation; EPA Comment: EPA's analysis of LASAR data from station 10948 between the same dates showed 4 days out of 25 (16%) exceeding the spawning criteria.

  Record 14995 for iron in Hood River; DEQ basis for delisting: *[ODEQ] STATION 12012 at RM 0.7 for 6 samples from 03/22/2002 to 04/22/2002, 0 of 6 valid samples exceed the 1000 ug/L criteria;* And [ODEQ] STATION 13158 at RM 1 for 13 samples from 03/23/2000 to 07/06/2001, 1

of 13 valid samples exceed the 1000 ug/L criteria; EPA Comment: EPA's analysis of LASAR data showed 3 sample days out of 6 days exceeding the criterion at station 12012 in 2010.

- EPA also asserts that the following waters in the Tualatin remain listed:

Proposed De-Listings: Table 1

Willamette Tualatin 17090010 24532	Beaverton Creek 1228308454934 0 to 9.8 9.8	Dissolved Oxygen	January 1 - May 15	Spawning: Not less than 11.0 mg/L or 95% of saturation		Criteria change or use clarification	Delisted - Criteria change or use clarification
Willamette Tualatin 17090010 24542	Bronson Creek 1228861455195 0 to 5 5	Dissolved Oxygen	January 1 - May 15	Spawning: Not less than 11.0 mg/L or 95% of saturation		Criteria change or use clarification	Delisted - Criteria change or use clarification
Willamette Tualatin 17090010 24543	Bronson Creek 1228861455195 5 to 6.5 1.5	Dissolved Oxygen	January 1 - May 15	Spawning: Not less than 11.0 mg/L or 95% of saturation		Criteria change or use clarification	Delisted - Criteria change or use clarification
Willamette Tualatin 17090010 24538	Cedar Mill Creek 1228477455001 0 to 5.8 5.8	Dissolved Oxygen	January 1 - May 15	Spawning: Not less than 11.0 mg/L or 95% of saturation		Criteria change or use clarification	Delisted - Criteria change or use clarification
Willamette Tualatin 17090010 24535	Chicken Creek 1228372453885 0 to 2.7 2.7	Dissolved Oxygen	January 1 - May 15	Spawning: Not less than 11.0 mg/L or 95% of saturation		Criteria change or use clarification	Delisted - Criteria change or use clarification
Willamette Tualatin	Dairy Creek 1229958455017 0 to 10.1	Dissolved Oxygen	January 1 - May 15	Spawning: Not less than 11.0 mg/L or		Criteria change or use clarification	Delisted - Criteria change or use

17090010 24562	10.1			95% of saturation			clarification
Willamette Tualatin 17090010 24552	Dawson Creek 1229329455162 0 to 4.1 4.1	Dissolved Oxygen	January 1 - May 15	Spawning: Not less than 11.0 mg/L or 95% of saturation		Criteria change or use clarification	Delisted - Criteria change or use clarification
Willamette Tualatin 17090010 24534	Johnson Creek 1228355454932 2.1 to 4 7.7	Dissolved Oxygen	January 1 - May 15	Spawning: Not less than 11.0 mg/L or 95% of saturation		Cat 2: Attaining some criteria/uses	Delisted - Data show criteria met
Willamette Tualatin 17090010 24534	Johnson Creek 1228355454932 2.1 to 4 7.7	Dissolved Oxygen	January 1 - May 15	Spawning: Not less than 11.0 mg/L or 95% of saturation		Cat 2: Attaining some criteria/uses	Delisted - Data show criteria met
Willamette Tualatin 17090010 20953	McKay Creek 1230119455224 0 to 15.7 15.7	Dissolved Oxygen	January 1 - May 15	Spawning: Not less than 11.0 mg/L or 95% of saturation	Resident trout spawning	Criteria change or use clarification	Delisted - Criteria change or use clarification
Willamette Tualatin 17090010 24507	Tualatin River 1226500453377 0 to 62.6 62.6	Dissolved Oxygen	January 1 - May 15	Spawning: Not less than 11.0 mg/L or 95% of saturation		Criteria change or use clarification	Delisted - Criteria change or use clarification
Willamette Tualatin 17090010 24512	Unnamed (Nyberg Creek) 1227381453844 0 to 1.3 1.3	Dissolved Oxygen	January 1 - May 15	Spawning: Not less than 11.0 mg/L or 95% of saturation		Criteria change or use clarification	Delisted - Criteria change or use clarification

The above waters that ODEQ proposes to de-list were originally listed in 2010, based upon the approved criterion in place that is applicable to each waterbody (column 5). ODEQ had submitted the dissolved oxygen water quality standard to EPA for review in 1998, and it was approved after a clarifying memo was supplied (approved by EPA in 1999). Slight revisions, including the addition of designated use maps for some uses, were submitted in 2003 to EPA for review and approval, together with a 2004 subsequent clarifying memo (approved by EPA in 2004). ODEQ has a procedure in place for identifying where designated uses and criteria apply, which relies on an ecoregional map approach, and spawning and rearing maps adopted into standards to derive where and when other criteria and uses apply. Oregon's procedure has been documented in the aforementioned two memos that were submitted to EPA as part of the record for the original decisions to approve the water quality standards. Trout spawning, the use/criterion that ODEQ is alleging does not apply in the above waters, was addressed in the aforementioned memoranda. The 1998 memorandum from Michael T. Llewelyn to Phillip Millam states: "to address differences in actual spawning periods, the Department will consult directly with ODFW to determine if waterbody-specific adjustments (*which would be changes to the standards*) are necessary," (emphasis added). In the 2003 submission, ODEQ edited the dissolved oxygen language to apply the dissolved oxygen spawning criterion to "wherever resident trout spawning occurs." Because ODEQ did not define exactly where this use occurs in its submission to EPA, a 2004 memorandum from Michael. T. Llewelyn to Randy Smith included the following clarification for how ODEQ would determine where and when trout spawning occurs:

The revised Oregon rules clarified spawning locations and timing for anadromous fish and Lahontan Cutthroat Trout. Due to a lack of site specific data for species other than these, and since temperature criteria for spawning were not established for other species, no similar clarification was made for resident trout (i.e., rainbow, redband, Westslope cutthroat and coastal cutthroat) or char (bull trout) spawning. However, the dissolved oxygen criteria contain provisions that continue to apply to resident trout and char spawning areas. DEQ will use the following dates to apply the dissolved oxygen spawning criteria (throughout the range where the Oregon maps indicate trout rearing, redband trout and core cold water habitat uses are identified).(emphasis added)

Note that the de-italicized text specifically identifies that the extent of resident trout spawning is equivalent to the extent of the territory identified as trout rearing on the Oregon maps that were submitted to EPA for review and approval in 2003 and approved in 2004.

For the de-listings excerpted into Table 1, Oregon has not submitted the use refinements or criteria changes to EPA for review and approval under Section 303(c) of the Clean Water Act. Oregon instead refers to two documents that are not part of the record for the dissolved oxygen water quality standard to justify the delistings. The first is a letter of communication from ODFW to ODEQ, which makes reference to a map of trout spawning that ODEQ submitted to ODFW in 2006, which ODEQ identified as the proposed extent of current (in 2006) trout spawning in the Tualatin Basin. The document makes reference to "proposed criteria." Second, ODEQ cites to the 2001 TMDL, in which ODEQ had identified on a map the extent of trout spawning identified by ODEQ, although the data and information on which the map was based were not included in the TMDL.

We do not believe that Oregon can informally change the uses that apply to the above waters and de-list them simply by referring to documents outside the record. The documents themselves are problematic. The 2001 TMDL map constitutes a reversion to a potentially older methodology that was not considered in the record that was part of the review and approval process for Oregon's dissolved oxygen water quality standards. Further, the 2006 ODFW letter does not contain the information ODEQ shared with ODFW to make a new determination, and ODFW's opinion in the letter was not entirely confirmational, particularly in reference to the extent of cutthroat trout rearing and the extent of other trout species life stages. The most significant problem, however, is that ODEQ did not submit to EPA changes to its uses pursuant to a CWA 303(c) review and approval process. ODEQ must consider protection of existing uses and the best attainable uses for the affected streams (analyzed pursuant to 40 CFR 131.10(g) factors), for example, before it can remove a designated use. In summary, if ODEQ wishes to change how and where its uses apply, including its trout spawning use, it can do so through a CWA 303(c) review and approval process where the above questions and concerns are addressed and the information is reviewed by EPA.